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ABSTRACT

This booklet is one of a set of five booklets which comprise the basic curriculum for "Mathematics Laboratories for Disadvantaged Students," a nationally validated Title III ESEA project. This publication provides evaluation materials and student materials related to decimals. Topics included in this booklet are place value, addition, subtraction, multiplication, division, renaming decimals, and sizes of decimals. The project was designed for middle school students (grades 5-8). (RH)

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Laboratory Mathematics

Curriculum Booklet 4

Decimals

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SE 022 695

LABORATORY MATHEMATICS

Curriculum Booklet IV

Decimals

Developed by:

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Honea Path, South Carolina
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Honea Path, South Carolina
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A Nationally Validated Project
Funded under
Title III, Elementary and Secondary Education Act
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PREFACE

This booklet is one of a set of five booklets which comprises the basic curriculum for "Mathematics Laboratories for Disadvantaged Students," a nationally validated Title III ESEA project. Also included in the series is a teacher training booklet. The entire series of booklets was compiled by Mrs. Sandra Rogers who has worked in the mathematics laboratories project for three and one-half years. Mr. Dan Sandel, mathematics consultant for the South Carolina State Department of Education, served in an advisory capacity to Mrs. Rogers during the writing and compiling activity.

Teachers who plan to use the mathematics laboratory methods, as developed in this project, are cautioned to be aware that no one set of curriculum materials can be used with all students. The materials developed in this project should serve as the basic core of the laboratory curriculum with each teacher using his own initiative to adapt the materials to the needs of his students.

Materials and methodology alone will not produce a successful mathematics laboratory program. For success to be realized, the mathematics laboratory must be staffed with a teacher and an aide who are dedicated and enthusiastic and who are compassionate toward the type of students served in this project.

Dr. Marvin Woodson, Jr.
Assistant Superintendent and
Project Director

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DECIMALS - PRETEST A

Write a decimal for the following:

1. eight tenths = ____

2. five tenths = ____

3. three and seven tenths = ____

4. one hundred and six hundredths = ____

5. twenty-five and one hundred twenty-five thousandths = ____

Express each decimal in words.

6. .9 = _____

7. 3.7 = _____

8. 21.2 = _____

9. 5.01 = _____

10. 5.009 = _____

Do pages 2 and 3 ☐

Give the place value of each number that is starred.

11. 93.05* _____

12. 1.542* _____

13. 199.6* _____

14. 14.376* _____

15. 6.02* _____

16. 111.25* _____

17. .4* _____

18. 53* _____

19. 1,000,952.3* _____

20. 21,543.95* _____

Do page 4 ☐

Write a decimal for the following:

1. four tenths = ____

2. four and one tenth = ____

3. three and twelve hundredths = ____

4. eight hundredths = ____

5. ninety-five hundredths = _____

6. six and twenty-three hundredths = _____

7. fourteen and sixty hundredths _____

8. one thousandth = _____

9. two and twelve thousandths _____

10. eleven thousandths = _____

11. sixty-five thousandths = ___

12. ten and twelve thousandths = _____

13. twelve and eighteen thousandths = _____

14. eighteen and two tenths = _____

15. five and nine tenths = ____

16. one and thirty-six hundredths = _____

17. twenty-six and four hundredths = _____

18. eight thousandths = ____

19. four hundred thirty thousandths = ____

20. three and forty-one thousandths = ____

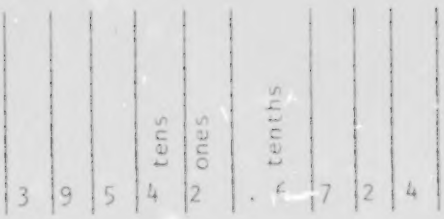
Express each decimal in words.

1. .7 = _____
2. 15. 1 = _____
3. .009 = _____
4. 6.47 = _____
5. .123 = _____
6. 217.3 = _____
7. 4.011 = _____
8. .03 = _____
9. .3 = _____
10. .003 = _____
11. 44.89 = _____
12. .9 = _____
13. .441 = _____
14. .019 = _____
15. .41 = _____
16. 1.101 = _____
17. 4.9 = _____
18. 21.07 = _____
19. 6.001 = _____
20. 12.7 = _____
21. 5.01 = _____
22. 1.001 = _____
23. .1 = _____
24. 18.2 = _____
25. .17 = _____

Place value

1. 67 means ____tens ____ones ____tenths ____hundredths
2. 8.9 means ____tens ____ones ____tenths ____hundredths
3. 3.46 means ____tens ____ones ____tenths ____hundredths
4. 57.5 means ____tens ____ones ____tenths ____hundredths
5. .85 means ____tens ____ones ____tenths ____hundredths
6. 9.01 means ____tens ____ones ____tenths ____hundredths
7. 3.2 means ____tens ____ones ____tenths ____hundredths
8. 25.75 means ____tens ____ones ____tenths ____hundredths
9. 84.09 means ____tens ____ones ____tenths ____hundredths
10. 6.32 means ____tens ____ones ____tenths ____hundredths

11. Fill in the following place value chart



12. Give the place value of each number circled.

A. 12.(7) _____

B. 21(7).3 _____

C. 42.0(0)8 _____

D. (2)13.3 _____

E. .00(3) _____

F. (3)6.037 _____

G. (1)00.1 _____

H. .0(1)9 _____

I. (4)4.8 _____

DECIMALS - PRETEST B - ADDITION

A.

1. $\begin{array}{r} .37 \\ +.23 \\ \hline \end{array}$

2. $\begin{array}{r} 1.3 \\ +\ .2 \\ \hline \end{array}$

3. $\begin{array}{r} 7.20 \\ +\ .39 \\ \hline \end{array}$

4. $\begin{array}{r} .3 \\ +\ .9 \\ \hline \end{array}$

5. $\begin{array}{r} 66.1 \\ +\ .2 \\ \hline \end{array}$

6. $\begin{array}{r} .509 \\ +.921 \\ \hline \end{array}$

7. $\begin{array}{r} 1.74 \\ +\ .03 \\ \hline \end{array}$

8. $\begin{array}{r} 2.2 \\ +\ .5 \\ \hline \end{array}$

9. $\begin{array}{r} 23.9 \\ +\ 1.7 \\ \hline \end{array}$

10. $\begin{array}{r} 107.5 \\ +\ \ .9 \\ \hline \end{array}$

Do pages 6 and 7. ☐

B.

11. 1.9 + .02 = ____

12. .2 + 1.0 = ____

13. 7.03 + 1.6 = ____

14. 23.9 + .2 = ____

15. .4 + .3 = ____

16. 3.02 + .5 = ____

17. 12.7 + .5 = ____

18. 107.32 + 94.2 = ____

19. 19.3 + 20.7 + 2 = ____

20. 11.74 + 2.3 = ____

Do pages 8 and 9. ☐

Add.

1. $\begin{array}{r} .64 \\ +.17 \\ \hline \end{array}$

2. $\begin{array}{r} .36 \\ +.91 \\ \hline \end{array}$

3. $\begin{array}{r} .46 \\ +.77 \\ \hline \end{array}$

4. $\begin{array}{r} .38 \\ +.16 \\ \hline \end{array}$

5. $\begin{array}{r} .81 \\ +.92 \\ \hline \end{array}$

6. $\begin{array}{r} .79 \\ +.83 \\ \hline \end{array}$

7. $\begin{array}{r} .46 \\ +.32 \\ \hline \end{array}$

8. $\begin{array}{r} .75 \\ +.21 \\ \hline \end{array}$

9. $\begin{array}{r} .67 \\ +.31 \\ \hline \end{array}$

10. $\begin{array}{r} .48 \\ +.21 \\ \hline \end{array}$

11. $\begin{array}{r} .73 \\ +.12 \\ \hline \end{array}$

12. $\begin{array}{r} 8.6 \\ +1.3 \\ \hline \end{array}$

13. $\begin{array}{r} 42.7 \\ +50.7 \\ \hline \end{array}$

14. $\begin{array}{r} 61.35 \\ +28.14 \\ \hline \end{array}$

15. $\begin{array}{r} 300.3 \\ +\ 28.7 \\ \hline \end{array}$

16. $\begin{array}{r} .46 \\ +.27 \\ \hline \end{array}$

17. $\begin{array}{r} .339 \\ +.113 \\ \hline \end{array}$

18. $\begin{array}{r} 9.07 \\ +\ .49 \\ \hline \end{array}$

19. $\begin{array}{r} .6172 \\ +.1298 \\ \hline \end{array}$

20. $\begin{array}{r} .4008 \\ +.2009 \\ \hline \end{array}$

21. $\begin{array}{r} 65.5 \\ +\ .9 \\ \hline \end{array}$

22. $\begin{array}{r} 37.5 \\ +\ 5.8 \\ \hline \end{array}$

23. $\begin{array}{r} .792 \\ +.199 \\ \hline \end{array}$

24. $\begin{array}{r} 1.27 \\ +3.86 \\ \hline \end{array}$

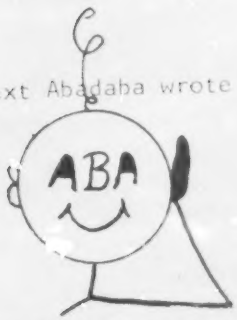
25. $\begin{array}{r} .94 \\ +.37 \\ \hline \end{array}$

Find the sums. All sums should be named by decimal numerals.

	a.	b.	c.	d.	e.
1.	4.7 5.9 6.3	9.7 6.1 17.2	18.3 4.6 1.2	29.8 16.8 14.7	192.8 64.3 7.2
2.	6.3 9.8 7.5 6.6	17.9 24.6 53.8 75.5	42.6 6.9 28.8 39.9	624.3 86.7 7.9 103.4	3206.2 279.8 65.7 143.6
3.	$24.42 65.82 7.96	45.32 6.97 8.54	62.17 40.02 16.09	$43.70 89.05 65.94	124.03 65.05 493.98
4.	302.78 641.24 48.07	$3024.62 694.53 11.09	42.85 707.07 60.06	3217.03 819.85 65.07	$543.43 21.01 491.19
5.	$281.05 108.19 330.78 197.07	142.53 160.59 179.26 180.03	792.12 76.12 1894.34 6.37	963.59 32.17 1563.92 967.80	$9696.37 102.10 1635.55 23.01

Abadaba wrote 1.8
+ 8.1 He reversed the digits in 1.8 and added.

9.9 The result was a palindromic decimal number after one reversal.



Next Abadaba wrote 19.6
+ 6.91 reverse the digits in 19.6 and add
26.51 result is not a palindrome
+ 15.62 reverse the digits in 26.51 and add
42.13 result is not a palindrome
+ 31.24 reverse the digits in 42.13 and add
73.37 result is a palindromic decimal number after 3 reversals.

Use Abadaba's addition pattern for decimals. Fill in the charts on the pattern of the first rows.

Starting number	Resulting No. palindrome	No. of reversals	Starting number	Resulting No. palindrome	No. of reversals
1.8	9.9	1	19.6	73.37	3
1.2			100.2		
3.6			298.7		
4.6			565.6		
5.7			706.6		
6.9			897.3		
7.9			20.22		
8.9			41.36		
9.31			54.54		
16.3			88.66		
39.8			91.45		
50.9			1100.9		
65.7			2227.7		
79.8			27.466		
87.6			50.189		
99.8			79.490		

Addition of Decimals

Prime Minister of India:

7 .5 8 7 3.0 4 3 4 .5 8 6 7

Prime Minister of Israel:

.3 .4 .1 8 4 4.9 .2 7 3.0

Solve the problems. Find the number that each letter represents. Fill in the blanks with the letters each number represents.

1. 2.4 + 3.7 = __ __ (H)

2. 46.3 + 33.9 = __ __ __ (E)

3. 84.6 + 9.5 = __ __ __ (A)

4. .33 + .26 = __ __ (N)

5. 4.52 + 5.58 = __ __ __ (L)

6. 24.39 + 8.7 = __ __ __ (R)

7. 456.8 + 34.67 = __ __ __ __ __ (O)

8. .8 + 6.3 = __ __ (I)

9. 7.64 + .874 = __ __ __ __ (D)

10. 15 + 2.3 = __ __ __ (G)

11. 14.6 + 9.54 + .8 = __ __ __ (M) __ (J)

DECIMALS-PRETEST C-SUBTRACTION

1. $\begin{array}{r} .37 \\ -.23 \\ \hline \end{array}$

2. $\begin{array}{r} 1.3 \\ -.2 \\ \hline \end{array}$

3. $\begin{array}{r} 7.20 \\ -.39 \\ \hline \end{array}$

4. $\begin{array}{r} .9 \\ -.3 \\ \hline \end{array}$

5. $\begin{array}{r} 66.1 \\ -.2 \\ \hline \end{array}$

6. $\begin{array}{r} .921 \\ -.509 \\ \hline \end{array}$

7. $\begin{array}{r} 1.74 \\ -.03 \\ \hline \end{array}$

8. $\begin{array}{r} 2.2 \\ -.5 \\ \hline \end{array}$

9. $\begin{array}{r} 23.7 \\ -1.9 \\ \hline \end{array}$

10. $\begin{array}{r} 107.9 \\ -.5 \\ \hline \end{array}$

Do page 11 and 12. ☐

11. 1.9 - .02 = _____

12. 1.0 - .2 = _____

13. 7.03 - 1.6 = _____

14. 23.9 - .2 = _____

15. .4 - .3 = _____

16. 3.02 - .5 = _____

17. 107.32 - 94.2 = _____

18. 19.3 - 2 = _____

19. 6 - .7 = _____

20. 10 - .93 = _____

Do pages 13. and 14. ☐

STUDY.

2 17	2 17
~~31~~ tenths	~~3.1~~
- 18 tenths	- 1.8
19 tenths	1.9

Rule: a. Subtract as with whole numbers
b. Place decimal point so difference is number of tenths.

DO. Fill in blanks.

1. 46 tenths
- 26 tenths
__ tenths

4.6
- 2.6
___

2. 53 tenths
- 26 tenths
__ tenths

5.3
-2.6
___

Subtract.

3. 3.2
-1.4

4. 6.4
-2.8

5. 7.1
-5.6

6. 3.0
-1.6

7. 4.6
-2.9

8. 3.6
-2.7

9. 4.2
-3.7

10. 4.0
-3.2

11. 2.4
-1.9

12. 4.6
-3.7

13. 46.8
-23.9

14. 59.2
-28.4

15. 73.4
-30.5

16. 82.6
-61.9

17. 56.1
-23.2

18. 51.2
-23.4

19. 63.4
-34.6

20. 72.5
-56.8

21. 83.6
-25.9

22. 94.7
-35.9

23. 371.6
-260.4

24. 893.7
-292.0

25. 438.2
-312.7

26. 931.2
-826.4

27. 341.6
-123.7

Subtraciton of Decimals.

1. 12.4
   - 1.3

2. 8.2
   -2.5

3. 10.5
   - 8.9

4. 37.6
   -18.9

5. 62.0
   -37.4

6. 73.6
   -14.8

7. 30.2
   -15.7

8. 46.1
   -18.5

9. 32.5
   - 8.9

10. 70.8
    -16.9

11. 43.4
    -27.8

12. 90.0
    -17.8

13. 61.2
    - 8.9

14. 40.5
    -17.8

15. 37.8
    -18.8

16. 68.4
    - 9.5

17. 71.3
    -27.4

18. 30.23
    -29.68

19. 30.04
    -28.89

20. 30.16
    -28.79

21. 30.76
    -29.78

22. 31.12
    -29.63

23. 342.16
    - 89.75

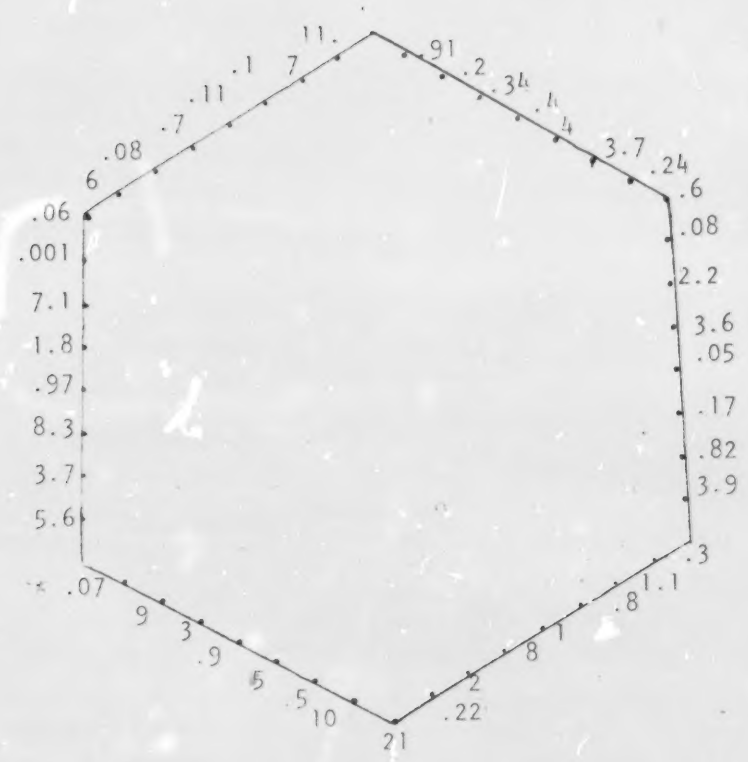
24. 206.34
    - 77.85

25. 423.05
    -168.96

Connect the answers in order.

1. .9 - .4 =
2. .9 - .1 =
3. .6 - .6 =
4. .8 - .6 =
5. .4 - .1 =
6. .9 - .3 =
7. 2.3 - 1.1 =
8. 4.4 - 2.3 =
9. 15.7 - 13.9 =
10. 2.13 - 2.09 =
11. 43.7 - 39.7 =
12. 87.2 - 86.8 =
13. 9.14 - 3.17 =
14. 2.432 - 2.424 =
15. 186.3 - 184.3 =
16. 21.43 - 9.5 =
17. 6.77 - 5.47 =
18. 9.6 - 4.6 =
19. 10.3 - 2.3 =
20. 42.3 - 40.6 =
21. 53.8 - 51.6 =
22. 291.34 - 290.24=
23. 4.6 - 3.61 =
24. 29.3 - 29.238 =
25. 31 - 2.4 =
26. 87 - .56 =
27. 92 - 91.9 =
28. 4.36 - 4 =
29. 72.21 - 69 =
30. 9.14 - 8.9 =
31. 56.29 - 56.23 =
32. 4.23 - 3.993 =
33. 12.6 - 11.63 =
34. 194.437 - 190.337 =
35. .843 - .143 =
36. .9 - .81 =
37. .9 - 0 =
38. 26.3 - 24.9 =
39. 8.81 - 6.11 =

STOP



Connect "a" and "b" answers for each of the following problems:

	(a)		(b)
1.	.9 - .2 =		.8 - .4 =
2.	.7 - .1 =		.6 - .3 =
3.	1.2 - .3 =		2.4 - .6 =
4.	3.7 - 1.6 =		5.6 - 1.7 =
5.	.56 - .32 =		14.3 - 7.3 =
6.	2.3 - 1.3 =		18.9 - 15.3 =
7.	.46 - .26 =		16.9 - 10.9 =
8.	5.13 - 2.03 =		19.3 - 9.3 =
9.	.09 - .03 =		.14 - .07 =
10.	1.13 - .96 =		2.41 - .41 =
11.	16.4 - 9.3 =		43.5 - 40.5 =
12.	9.43 - 8.52 =		5.31 - 5.25 =
13.	2.3 - 1.2 =		.51 - .43 =
14.	5.815 - 1.815 =		5.54 - 5.43
15.	10 - 9.5 =		15 - 6.7 =
16.	43.7 - 41.5 =		29.73 - 28.93 =
17.	6.57 - 5.6 =		54.1 - 49. 1 =
18.	82 - 78.3 =		5 - 4.9 =
19.	.87 - .869 =		44.7 - 35.7 =
20.	.9 - .08 =		4.3 - 4.08 =
21.	44.2 - 42.1 =		87 - 81.4 =
22.	99.4 - 91.4 =		.153 - .103 =
23.	.234 - .214 =		1.69 - 1.35 =
24.	36.54 - 25.54 =		2.49 - 1.89 =

DECIMALS - PRETEST D - MULTIPLICATION

1. $.7 \times 2$

2. $.03 \times 9$

3. 1.3×2

4. $.4 \times .7$

5. $.003 \times .4$

6. $.91 \times .36$

7. $1.4 \times .5$

8. 1.1×1.2

9. $.001 \times 15$

10. $.16 \times .9$

Do pages 16, 17, and 18. ☐

11. $1.3 \times 2 \times .7 =$ ____

12. $.2 \times 2 \times 2 =$ ____

13. $.5 \times .3 \times .4 =$ ____

14. $12 \times .11 \times 1 =$ ____

15. $4 \times 2 \times .10 =$ ____

16. $0 \times .5 =$ ____

17. $12 \times .6 \times .12 =$ ____

18. $3 \times .4 \times .03 =$ ____

19. $.10 \times 1.0 \times .10 =$ ____

20. $.50 \times .5 \times .2 =$ ____

Do page 19. ☐

1.0 11 2 .04 5 .8 4 7 .8 .01 11 3.1 .3 .04 .12 .13 4 11 7 7 ?

Solve the problems. Find the number that each letter represents. Fill in the blanks with the letters each number represents.

1. .3 x 1 = ___ (O)

2. .7 x 4 = __ __ (A)

3. .6 x .2 = ___ (N)

4. 2.8 x 4 = ___ (E) __

5. .263 x .5 = ___ (T) __ __

6. .021 x .9 = ___ (R) __ __

7. 2.1 x 3.6 = __ (S) __ __

8. .74 x 3.2 = __ (C) __ __ __

9. 8.71 x .61 = __ (M) __ __ __ __

10. 21.5 x 22 = __ (L) __ __

11. .146 x .32 = ___ (I) __ __ __

12. 216.3 x .005 = ___ (D) __ __ __

13. 48.36 x 1.1 = ___ (P) __ __ __

Multiplying decimals.

Multiply these decimals. You will have to add zeros before placing the decimal point in your answers.

.12 -- 2 decimal places
x.7 --+1 decimal place

.084-- 3 decimal places

1. .15
× .5

2. .28
×.09

3. 5.4
× .006

4. .009
× .08

5. .846
×.009

6. 2.1
×.013

7. .47
×.0062

8. .31
× .32

9. 3.8
×.0076

10. .328
×.044

Multiply these decimals. You may or may not need to add zeros before placing the decimal point in your answer.

11. 3.4
× .6

12. .28
× .07

13. 1.76
×.14

14. .025
×.076

15. .0027
× 4.1

16. .049
× .98

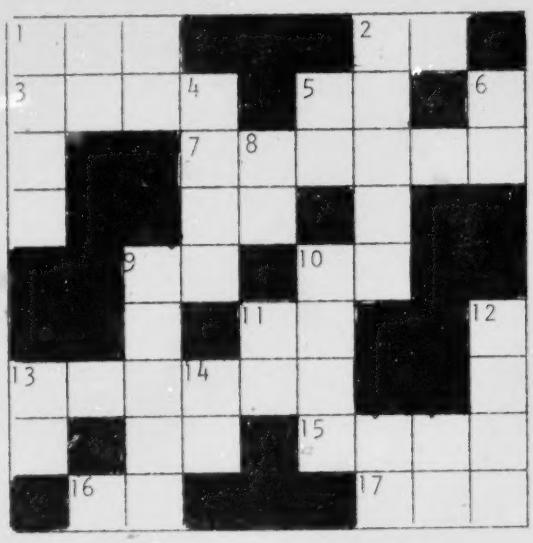
Complete this cross number puzzle. Every answer has a decimal point. A decimal point takes up a whole space by itself.

ACROSS

1. 95 × .2
2. .8 × 2.5
3. 2.9 × 2.2
5. 12.5 × .24
7. .15 × 606.7
11. .4 × .5
13. 96.3 × 7.2
15. 110 × .12
16. 1.5 × .6
17. 1.64 × .5

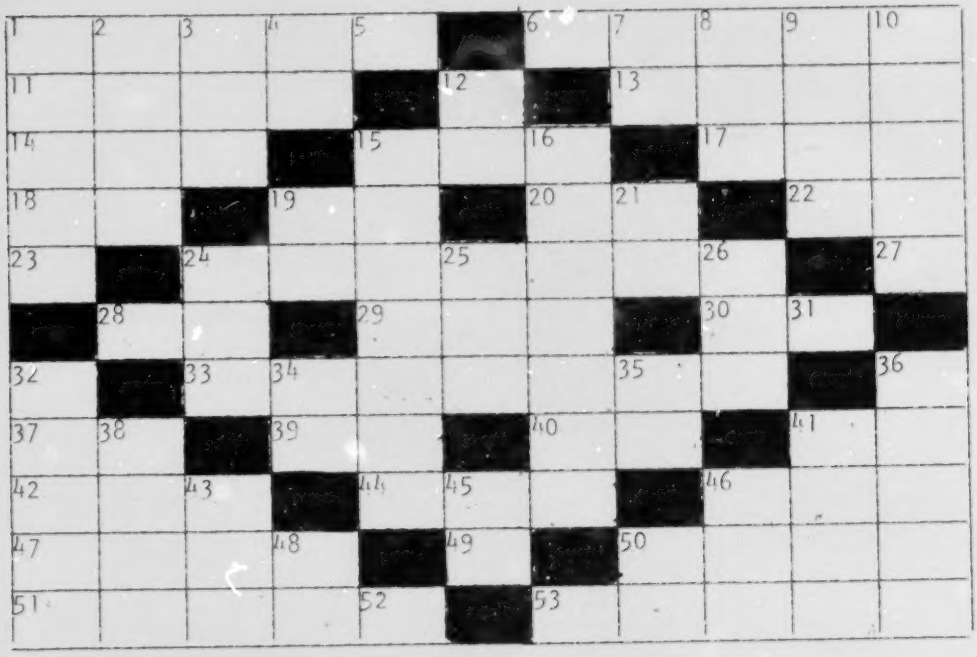
DOWN

1. .41 × 40
2. 15.6 × .13
4. 330 × 2.7
6. 1.25 × .4
8. 10 × .1
9. 67.1 × 9
10. 2.9 × .09
12. 38 × .19
13. 1.5 × 4
14. .625 × .8



Multiplication of Decimals.

The decimal should be in the box with the tenths digit.



ACROSS

1. 48.3 x 5.5
6. 314 x .67
11. 84 x .27
12. 7 x .1
13. .193 x 1.7
14. 98 x 4.5
15. .455 x .2
17. 75 x 6.6
18. .24 x 5
19. 10 x .01
20. 17 x .5
22. 2.6 x 2.5
23. .16 x 50
24. .0146 x .068
27. 10 x .2
28. 2.6 x .3
29. .14 x 29
30. .18 x .5
32. 80 x .05
33. 2,448,628 x .01
36. 15 x .4
37. 1.9 x 4
39. 81.25 x .8
40. 47 x .02
41. .625 x 16
42. 94 x 8
44. 1.9 x 2.7
46. .38 x 2.6
47. 89.5 x 94
49. 2.5 x 3.2
50. 454 x .65
51. 567 x .18
53. 84.3 x .056

DOWN

1. 101.9 x 220
2. 3.121 x 200
3. 1.7 x 3.3
4. .04 x 17
5. 5000 x .001
6. 2.5 x .8
7. 52 x .025
8. .16 x .15
9. 4870 x .8
10. 1699 x .48
12. 158 x .005
15. .0045 x .099
16. 63223.1 x .3
19. .125 x .8
21. 3.25 x .16
24. .205 x .4
25. 4 x 2.27
26. 50.5 x .16
28. 2.8 x .25
31. 1.8 x 5
32. 5309 x .9
34. 115 x .4
35. .75 x .32
36. 304.09 x 2
38. 3.270 x .2
41. 3.7 x 500
43. 132.5 x 1.6
45. 45 x .004
46. 1.24 x .8
48. 2.5 x 12
50. 9 x .3
52. .75 x 8
53. 2000 x .002

1. .2 x 2 x 2 = ____
2. 1.2 x 2 x .5 = ____
3. .9 x .4 x 3 = ____
4. 0 x .5 x .932 = ____
5. 7.9 x .06 x 1 = ____
6. 8.4 x 3 x .2 = ____
7. 3 x 3 x .3 = ____
8. 2.36 x .07 = ____
9. 6.3 x 1.5 x 2 = ____
10. .1 x .11 x 2 = ____
11. .908 x 63 = ____
12. .6 x 5 x 2 = ____
13. 4.0 x .5 x 6 = ____
14. 10.8 x 5.04 = ____
15. 8.4 x 3 x 2 = ____
16. .5 x .7 x .2 = ____
17. 1.3 x .2 = ____
18. .6 x 6 x .2 = ____
19. .4 x .2 x .2 = ____
20. 8 x 9 x .3 = ____
21. 2 x .5 x .5 = ____
22. 3 x 6 x .4 = ____
23. 18.1 x .008 = ____
24. .2 x .3 x .5 = ____
25. 8.3 x .7 = ____
26. .001 x .03 = ____
27. .023 x .14 = ____
28. 3.7 x .8 x .2 = ____
29. .8 x .8 x 10 = ____
30. 10 x 10 x .10 = ____
31. .5 x .9 x 10 = ____
32. .3 x 3 x 3 = ____
33. .1 x .1 x .1 = ____

DECIMALS-PRETEST E-DIVISION

A.

1. $5\overline{)3.6}$

2. $3\overline{)40.2}$

3. $10\overline{)4.300}$

4. $2\overline{).222}$

5. $14\overline{).287}$

6. $6\overline{)5.34}$

7. $9\overline{).909}$

8. $24\overline{)39.95}$

9. $7\overline{).4907}$

10. $5\overline{)25.5}$

Do pages 21 and 22. ☐

B.

11. $1.1\overline{).121}$

12. $.6\overline{)785}$

13. $.15\overline{).255}$

14. $1.3\overline{)69.9}$

15. $.04\overline{).56}$

16. $.001\overline{)593}$

17. $.2\overline{).255}$

18. $.12\overline{)24}$

19. $.95\overline{).95095}$

20. $.11\overline{).121}$

Do pages 23, 24, and 25. ☐

THINKING ABOUT DIVISION

To divide 16.38 by 7, you could rename 16.38 as a mixed numeral. You know how to do this division:

$$16\frac{38}{100} \div 7 = \frac{1638}{100} \times \frac{1}{7} = \frac{1638}{7} \times \frac{1}{100} = 234 \times \frac{1}{100} = 2.34$$

Other ways to find the quotient are shown in Examples A and B.

A.

```
7)16.38
 14.00   2 x 7
  2.38
  2.10   0.3 x 7
  0.28
  0.28   0.04 x 7
     0   2.34
```

B. Estimate an answer

16.38 ÷ 7 = 2

Divide using numerals for whole numbers. Then place the decimal point.

16.38 ÷ 7 = 2.34

```
  234
7)1638
 14
 23
 21
  28
  28
   0
```

What is an "easier" way to locate the decimal point? _____

Find the quotients using any method you like.

	a.	b.	c.	d.
1.	$3\overline{)4.11}$	$4\overline{)6.36}$	$5\overline{)7.25}$	$6\overline{)6.36}$
2.	$7\overline{)27.3}$	$8\overline{)2.24}$	$9\overline{)1.26}$	$6\overline{)7.74}$
3.	$30\overline{)632.10}$	$40\overline{)244.40}$	$60\overline{)832.20}$	$50\overline{)246.50}$
4.	$43\overline{)162.11}$	$56\overline{)225.68}$	$73\overline{)377.41}$	$84\overline{)507.36}$

Dividing decimals by whole numbers.

Divide.

1. $7\overline{)2.38}$ 2. $8\overline{)99.2}$ 3. $6\overline{)14.04}$ 4. $4\overline{)129.64}$ 5. $9\overline{)348.84}$

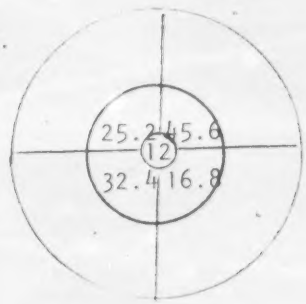
6. $12\overline{)56.64}$ 7. $55\overline{)210.10}$ 8. $13\overline{)52.26}$ 9. $45\overline{)135.090}$ 10. $36\overline{)202.68}$

Divide each number below by the number in the center. Place the answers in the outer circle.

11.

12.

13.



14. Add the answers in each outer circle of problems 11, 12, and 13.

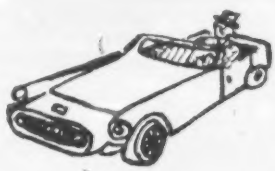
What do you notice?_____

15.

Paycard:	Jones
Number of hours	42
Pay	$98.70

How much is Mr. Jones paid per hour $_____

16.



Mr. Jones traveled 292.5 miles in 9 hours. What was his average speed per hour?_____

17.

Four football players weigh 862.8 lbs. What was the average weight?

_____lbs.

18.

If you bought this TV, how much would you pay altogether each month if you paid for it in twelve equal payments? $_____

To locate the decimal point in a quotient we multiply the divisor and dividend by the same power of ten.

$.4\overline{).28}$ $\qquad$ $4\overline{)2.8}$ $\quad .7$

$.012\overline{)2.76}$ $\qquad$ $12\overline{)2760}$ $\quad 230$

1. Replace each problem by a problem with a whole number divisor which has the same quotient. Then divide.

a. $.4\overline{)33.2}$ $\qquad$ c. $.002\overline{)7.266}$ $\qquad$ e. $.34\overline{)2.686}$

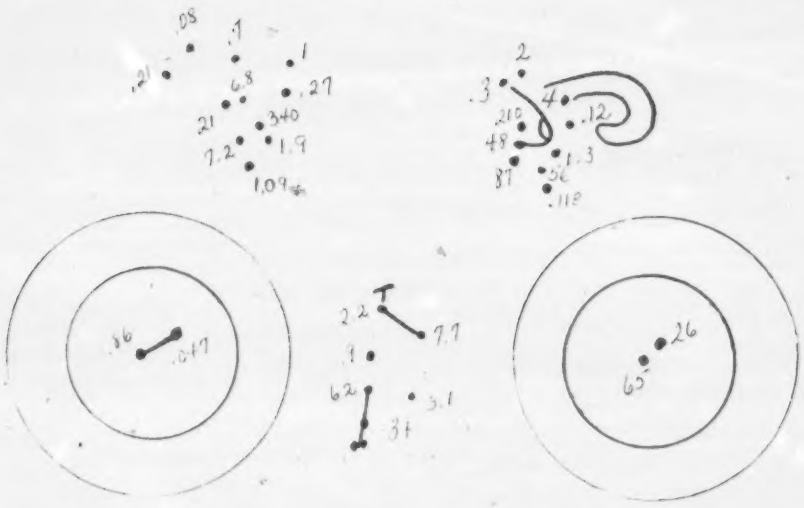
b. $.6\overline{).636}$ $\qquad$ d. $5.5\overline{)3.630}$ $\qquad$ f. $.083\overline{).30959}$

2. Give the quotients.

a. $.46\overline{)2.025}$ $\qquad$ d. $.81\overline{)63.18}$ $\qquad$ g. $.192\overline{)161.28}$

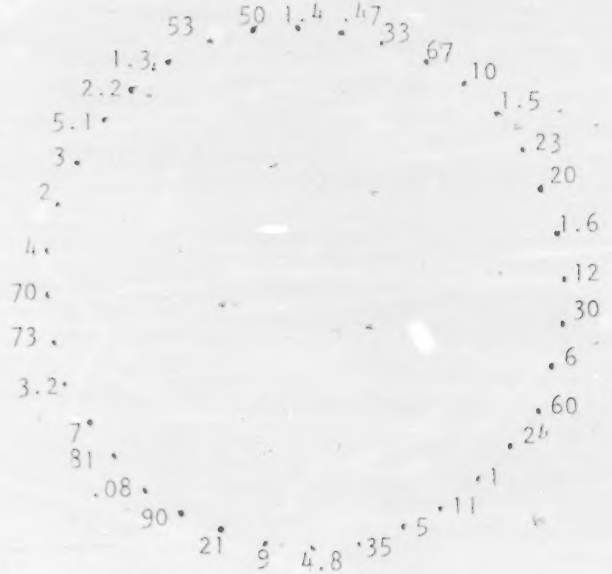
b. $9.2\overline{)20.792}$ $\qquad$ e. $.24\overline{)4.8}$ $\qquad$ h. $.35\overline{)21}$

c. $.089\overline{).055091}$ $\qquad$ f. $1.12\overline{)268.8}$ $\qquad$ i. $.082\overline{)5904}$



Connect the answers in order.

1. 4.2 ÷ 6 = _____
2. .72 ÷ 9 = _____
3. .84 ÷ 4 = _____
4. 16.8 ÷ 8 = _____
5. 14.4 ÷ 2 = _____
6. 6.02 ÷ 7 = _____
7. .34 ÷ 1 = _____
8. 15.5 ÷ 5 = _____
9. 23.1 ÷ 3 = _____
10. 43.4 ÷ .7 = _____
11. .218 ÷ .2 = _____
12. .0141 ÷ .3 = _____
13. .132 ÷ .06 = _____
14. .045 ÷ .05 = _____
15. 1.52 ÷ .2 = _____
16. 4.32 ÷ .09 = _____
17. 34.8 ÷ .4 = _____
18. 5.6 ÷ .1 = _____
19. 1.8 ÷ 2 = _____
20. .62 ÷ .01 = _____
21. .708 ÷ 6 = _____
22. 4.55 ÷ .07 = _____
23. .026 ÷ .01 = _____
24. 13.0 ÷ 10 = _____
25. 1.44 ÷ 12 = _____
26. 10.0 ÷ 2.5 = _____
27. .30 ÷ .15 = _____
28. .0015 ÷ .005 = _____
29. 4.2 ÷ .02 = _____
30. .34 ÷ .001 = _____
31. .136 ÷ .02 = _____
32. 1.35 ÷ 5 = _____
33. 5.5 ÷ 5.5 = _____
34. .7 ÷ 1 = _____



Connect "a" and "b" answers for each problem.

	(a)	(b)
1.	9.8 ÷ 7 = ____	.63 ÷ .09 = ____
2.	17.2 ÷ 4.3 = ____	5.62 ÷ .562 = ____
3.	201.6 ÷ 8.4 = ____	6.72 ÷ 2.1 = ____
4.	1.75 ÷ .025 = ____	3.41 ÷ .31 = ____
5.	.165 ÷ .11 = ____	49 ÷ 1.4 = ____
6.	.84 ÷ .04 = ____	70.4 ÷ 32 = ____
7.	1.881 ÷ .057 = ____	8.34 ÷ 8.34 = ____
8.	.096 ÷ 1.2 = ____	7.42 ÷ .14 = ____
9.	2.82 ÷ 6 = ____	1.92 ÷ .08 = ____
10.	4.5 ÷ .15 = ____	5.84 ÷ 73 = ____
11.	64.8 ÷ .8 = ____	.85 ÷ .017 = ____
12.	4 ÷ .8 = ____	54 ÷ 5.4 = ____
13.	13.5 ÷ 2.7 = ____	.316 ÷ .079 = ____
14.	14.4 ÷ 3 = ____	.15 ÷ .05 = ____
15.	8.1 ÷ .9 = ____	126 ÷ 6.3 = ____
16.	36.5 ÷ .5 = ____	.924 ÷ .924 = ____
17.	4.69 ÷ .07 = ____	13.2 ÷ 1.2 = ____
18.	37.6 ÷ 80 = ____	1.536 ÷ .48 = ____
19.	4.32 ÷ .9 = ____	4.83 ÷ .21 = ____
20.	33.3 ÷ 3.7 = ____	.408 ÷ .08 = ____
21.	3.75 ÷ 2.5 = ____	47 ÷ 23.5 = ____
22.	35 ÷ .7 = ____	10.8 ÷ 1.8 = ____
23.	13.2 ÷ 1.1 = ____	94.12 ÷ 72.4 = ____
24.	.189 ÷ .009 = ____	24 ÷ 15 = ____
25.	39.2 ÷ 5.6 = ____	9 ÷ .15 = ____
26.	6.11 ÷ 4.7 = ____	225 ÷ 2.5 = ____
27.	441 ÷ 6.3 = ____	6.03 ÷ .09 = ____
28.	89.1 ÷ 1.1 = ____	52.2 ÷ 8.7 = ____
29.	112 ÷ 5.6 = ____	.663 ÷ .13 = ____
30.	14.85 ÷ .45 = ____	8.03 ÷ .11 = ____
31.	.028 ÷ .02 = ____	21 ÷ .35 = ____
32.	45.5 ÷ 1.3 = ____	93 ÷ 46.5 = ____
33.	2.65 ÷ .05 = ____	17.4 ÷ .58 = ____
34.	156.2 ÷ 71 = ____	35.2 ÷ 22 = ____
35.	2.85 ÷ .95 = ____	16.1 ÷ .7 = ____
36.	2.04 ÷ .17 = ____	38.7 ÷ .43 = ____

DECIMALS - PRETEST F

A. Write as a fraction.

1. 2.5 = ____
2. .7 = ____
3. 39.52 = ____
4. 10.607 = ____
5. .399 = ____
6. 1.7 = ____
7. .03 = ____
8. 2.004 = ____
9. .50 = ____
10. .005 = ____

Do pages 27 and 28. ☐

B. Write as a decimal.

11. 1 3/4 = ____
12. 6 2/5 = ____
13. 1/3 = ____
14. 2/10 = ____
15. 3 1/2 = ____
16. 19 6/50 = ____
17. 11/40 = ____
18. 1/4 = ____
19. 6 1/2 = ____
20. 2 1/100 = ____

Do pages 29 and 30. ☐

Write each decimal number as a fraction.

1. 1.8 = ____
2. 7.03 = ____
3. .02 = ____
4. 1.6 = ____
5. 3.02 = ____
6. .5 = ____
7. .2 = ____
8. 1.0 = ____
9. 23.9 = ____
10. 11.74 = ____
11. .921 = ____
12. .509 = ____
13. 7.20 = ____
14. .37 = ____
15. 66.1 = ____
16. .9 = ____
17. 1.3 = ____
18. 20.7 = ____
19. 107.32 = ____
20. .21 = ____
21. 1894.7 = ____
22. 7.03 = ____
23. 2.3 = ____
24. .7094 = ____
25. .09 = ____
26. 19.3 = ____
27. .255 = ____
28. 201.6 = ____
29. 22.2 = ____
30. 7.30 = ____

KNOCK! KNOCK!

WHO'S THERE?

$\overline{5}\ \overline{3}\ \overline{7}\ \overline{7}\ \overline{2}\ \overline{25}$!

$\overline{5}\ \overline{3}\ \overline{7}\ \overline{7}\ \overline{2}\ \overline{25}\quad \overline{500}\ \overline{20}\ \overline{62}$?

$\overline{5}\ \overline{3}\ \overline{7}\ \overline{7}\ \overline{2}\ \overline{25}\quad \overline{8}\ \overline{25}\ \overline{6}\ \overline{62}\ \overline{7}\ \overline{25}$!

WHO'S WITH YOU?

$\overline{4}\ \overline{3}\ \overline{8}\ \overline{2}\ \overline{25}$!

$\overline{4}\ \overline{3}\ \overline{8}\ \overline{2}\ \overline{25}\quad \overline{500}\ \overline{20}\ \overline{62}$?

$\overline{4}\ \overline{3}\ \overline{8}\ \overline{2}\ \overline{25}\quad \overline{3}\ \overline{100}\ \overline{4}\ \overline{500}\ \overline{25}\ \overline{7}$!

Solve the problems. Find the number that each letter represents. Fill in the blanks with the letters each number represents.

1. $.27 = \frac{27}{N}$

2. $.35 = \frac{7}{H}$

3. $.64 = \frac{16}{E}$

4. $.002 = \frac{1}{W}$

5. $.240 = \frac{F}{25}$

6. $.496 = \frac{O}{125}$

7. $\frac{1}{4} = .\ \overline{I}\ -$

8. $\frac{3}{8} = .\ \overline{A}\ -\ -$

9. $\frac{4}{5} = .\ \overline{D}$

10. $\frac{7}{10} = .\ \overline{R}$

11. $\frac{9}{20} = .\ \overline{S}\ -$

12. $\frac{3}{16} = .\ -\ -\ -\ \overline{C}$

Changing fractions to decimals

Change each fraction to a decimal.

1. 1/5 = ____ 2. 3/5 = ____ 3. 7/10 = ____ 4. 9/20 = ____

5. 19/20 = ____ 6. 7/25 = ____ 7. 21/25 = ____ 8. 37/40 = ____

9. 9/50 = ____ 10. 5/8 = ____

Change each fraction to a decimal. Round your answer to the nearest hundredth.

11. 2/7 = ____ 12. 8/9 = ____ 13. 6/11 = ____ 14. 2/11 = ____

15. 1/13 = ____ 16. 7/13 = ____ 17. 3/14 = ____ 18. 4/15 = ____

19. 7/16 = ____ 20. 5/12 = ____

21. Complete this table. Write each fraction as a decimal rounded to the nearest thousandth.

Fraction	4/9	5/7	7/8	3/11	10/11	5/12	11/12	7/15	19/24	11/30
Decimal										

22. Decode the message. First change each fraction to a decimal. Then use the decoder to find the message.

Decoder	.091	.143	.25	.417	.429	.5	.625	.75	.8
	H	M	A	N	T	I	G	E	O

Coded message 1/7 3/4 3/4 3/7 1/7 3/4 1/4 3/7

Decimals ___ ___ ___ ___ ___ ___ ___ ___

Decoded message ___ ___ ___ ___ ___ ___ ___ ___

3/4 1/2 5/8 1/11 3/7 3/7 4/5 5/12 1/2 5/8 1/11 3/7

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Change each fraction to a decimal.

Divide bottom number into top number.

EXAMPLE. 2/5 = .4 $5\overline{)2.0}$ (.4)

1. 1/4 = ____
2. 3/8 = ____
3. 4/5 = ____
4. 7/10 = ____
5. 9/20 = ____
6. 3/16 = ____
7. 1/5 = ____
8. 3/5 = ____
9. 1/50 = ____
10. 9/25 = ____
11. 1/2 = ____
12. 5/4 = ____
13. 1/3 = ____
14. 3/4 = ____
15. 1/1000 = ____
16. 9/10 = ____
17. 3/5 = ____
18. 1/25 = ____
19. 7/20 = ____
20. 7/10 = ____
21. 1/8 = ____
22. 3/10 = ____
23. 3/20 = ____
24. 5/6 = ____
25. 2/5 = ____
26. 3/25 = ____
27. 1/100 = ____
28. 4/5 = ____
29. 1/20 = ____
30. 2/3 = ____

DECIMALS - PRETEST G

Which is larger?

1. .3 or .03 or 3

2. 2.75 or 2.8 or 2.7

3. 1.17 or 1.03 or 1.15 or 1.7

4. 5.07 or 4.05 or 2.44

5. .003 or .010 or .125 or .045

6. 3.12 or 2.985 or 1.666

7. .35 or .7 or .070

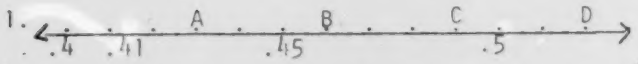
8. .7 or .70 or .700

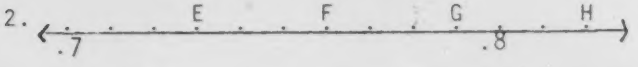
9. 51.3 or 5.13 or .513

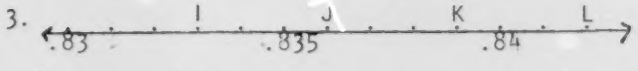
10. .01 or .051 or .8

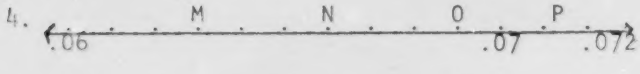
Do page 32.

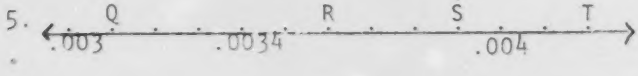
Complete the table by naming the lettered points on each number line.

1. 

2. 

3. 

4. 

5. 

	Point	Name
1.	A	.43
	B	
	C	
	D	
2.	E	
	F	
	G	
	H	
3.	I	
	J	
	K	
	L	
4.	M	
	N	
	O	
	P	
5.	Q	
	R	
	S	
	T	

Write $<$, =, or $>$ in each blank.

6. .75 ____ .8

7. 2.1 ____ 1.978

8. 3.01 ____ 3.011

9. .2 ____ .1995

10. .78 ____ .7800

11. 5.37 ____ 5.3701

12. .79 ____ .7849

13. 16.1 ____ 16.1013

14. 3.01 ____ 2.1957

15. .579 ____ .5793

16. 8.032 ____ 8.1

17. 6.29 ____ 6.2903